MISSISSIPPI PEANUT
VARIETY TRIALS, 2018

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MISSISSIPPI'S OFFICIAL VARIETY TRIALS

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

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This report contains data generated as part of the Mississippi Agricultural and Forestry Experiment Station research program. Trade names of commercial products used in this report are included only for clarity and understanding.

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Mississippi Peanut Variety Trials, 2018

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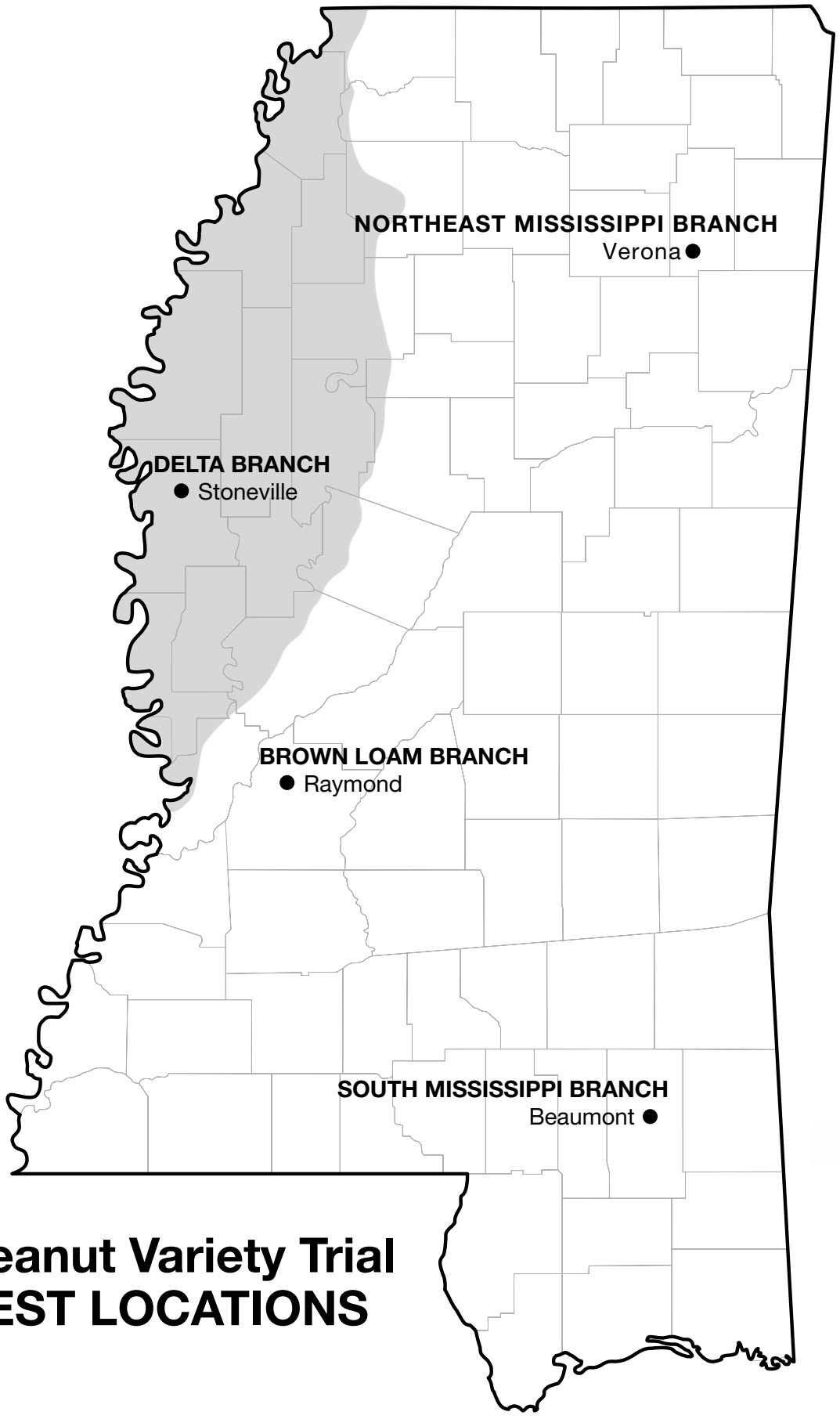
Find variety trial information online at ***mafes.msstate.edu/variety-trials***.



Peanut Variety Trial
TEST LOCATIONS

Mississippi Peanut Variety Trials, 2018

PROCEDURES

Peanut variety trials were conducted at four locations in Mississippi in 2018. Trials were conducted on Experiment Station land to attempt to represent the different geographic regions of the state in which peanuts are grown. The same commercially available varieties of peanuts were tested at all four locations.

Plots consisted of two 38-inch-wide, 30-foot-long twin rows. Weeds were controlled by cultivation and/or herbicides. Only herbicides currently registered for use on peanuts were used in these studies, with strict adherence to all label instructions.

All varieties were treated with a fungicide seed treatment and an in-furrow insecticide. Experimental design was a randomized complete block with four replications at each location.

All varieties were planted with a two-row, twin-drill, Monosem plot planter at a uniform seeding rate of six seeds per foot. Fertilizer was applied according to soil test recommendations.

The plots were dug with a KMC two-row peanut digger. After proper drying, the total plot area was harvested with a KMC two-row, pull-type, peanut combine fitted with a bagging attachment. The harvested plots were weighed, moisture was determined, and yields were converted to pounds per acre, following statistical analysis. All plots weights were adjusted to a standard moisture of 13%.

USE OF DATA TABLES AND SUMMARY STATISTICS

The yield potential of a given variety cannot be predicted with complete accuracy. Consequently, replicate plots of all varieties are evaluated for yield, and the yield of a given variety is estimated as the mean of all replicate plots of that variety. Yields vary somewhat from one replicate plot to another, which introduces a certain degree of error to the estimation of yield potential. This natural variation is often responsible for yield differences among different varieties. Thus, even if the mean yields of two varieties are numerically different, they are not necessarily significantly different in terms of yield potential. In other words, the ability to measure yield is not precise enough to determine whether such small differences are observed purely by chance or because of superior performance. The least significant difference (LSD) is an estimate of the smallest difference between two varieties that can be declared to be the result of something other than random variation in a particular trial. Consider the following example for a given trial:

Variety	Yield
Abe	6,000 lb/A
Bill	5,600 lb/A
Charlie	4,900 lb/A
LSD	500 lb/A

The difference between variety Abe and variety Bill is 400 pounds per acre (6,000 - 5,600 = 400). This difference is **smaller** than the LSD (500 pounds per acre). Consequently, it is concluded that variety Abe and variety Bill have the same yield potential since the observed difference occurred purely due to chance. The difference between variety Abe and variety Charlie is 1,100 pounds per acre (6,000 - 4,900 = 1,100), which is **larger**

than the LSD (500 pounds per acre). Therefore, it is concluded that the yield potential of variety Abe is superior to that of variety Charlie since the difference is larger than would be expected purely by chance. The coefficient of variation (CV) is a measure of the relative precision of a given trial and is used to compare the relative precision of different trials. The CV is generally considered to be an estimate of the amount of unexplained variation in a given trial. This unexplained variation could be the result of variation between plots with respect to soil type, fertility, insects, diseases, weather stress, etc. In general, the higher the CV is, the lower the precision in a given trial. The coefficient of determination (R^2) is another measure of the level of precision in a trial and is also used to compare the relative precision of different trials. The R^2 is a measure of the amount of variation that is explained, or accounted for, in a given trial. For example, an R^2 value of 90% indicates that 90% of the observed variation in the trial has been accounted for, with the remaining 10% being unaccounted. The higher the R^2 value is, the more precise the trial. The R^2 is generally considered to be a better measure of precision than the CV for comparison of different trials.

TERMS USED

SMKRS count per pound (number per pound of sound, whole, mature kernels riding screen) — Number of sound whole mature kernels from 1 pound of the shelled sample riding a 15/64 x 1-inch slotted screen or a 16/64 x ¾-inch slotted screen for Virginia or Runner varieties, respectively.

Pct. SMKRS (sound mature kernels riding screen) — Portion of shelled sample as described above.

Pct. SS (sound splits) — Portion of shelled sample split or broken but not damaged.

Pct. TSMK (total sound mature kernels) — Portion of the shelled sample comprised of sound mature kernels plus sound splits.

Pct. OK (other kernels) — Kernels that pass thorough a 15/64 x 1-inch slotted screen or 16/64 x ¾-inch slotted screen for Virginia or Runner varieties, respectively.

Pct. DK (damaged kernels) — Kernels that are moldy, decayed, or affected by insects or weather conditions, resulting in seed coat or cotyledon discoloration or deterioration.

Pct. TK (total kernels) — All shelled sample kernels including TSMK, OK, and DK.

Pct. Hulls — All hulls from the shelled sample.

Table 1. 2018 Peanut Official Variety Trial yield and grade summary table.

Variety	Beaumont		Raymond		Stoneville		Verona		Overall average	
	Yield	TSMK	Yield	TSMK	Yield	TSMK	Yield	TSMK	Yield	TSMK
	lb/A	*%*	*lb/A*	*%*	*lb/A*	*%*	*lb/A*	*%*	*lb/A*	*%*
Georgia-06G	5964.9	65.4	6437.1	55.1	7738.7	70.7	6299.9	68.8	6610.1	65.0
Georgia-13M	4937.8	66.5	6528.2	66.1	6817.3	67.2	5613.0	73.4	5974.1	68.3
Georgia-14N	4105.2	69.9	5813.0	67.3	5323.0	71.0	4162.0	74.1	4850.8	70.6
Georgia-16HO	5327.8	65.8	6754.5	66.2	7731.3	64.6	6298.2	71.0	6528.0	66.9
TifNV-HI O/L	4737.0	67.4	6527.4	62.4	5494.9	66.9	6078.5	70.3	5709.4	66.8
Algrano QR14	3444.8	64.7	5172.1	59.8	5011.1	63.2	4149.0	66.9	4444.3	63.6
Algrano 914	5038.7	66.4	6255.9	63.2	6391.7	69.2	5701.9	69.6	5847.1	67.1
AU-NPL 17	5542.8	68.5	6705.7	64.7	6729.8	64.8	5635.4	71.2	6153.4	67.3
Georgia-12Y	5010.5	66.7	7101.2	66.4	7337.6	66.0	5597.2	70.4	6261.6	67.4
Georgia-09B	4179.0	68.5	6751.3	65.6	5711.9	67.7	5742.0	71.3	5596.1	68.3
FloRun™ '331'	5357.0	68.7	7082.3	61.6	7149.8	66.8	6559.9	71.9	6537.3	67.3
TUFRunner™ '511'	4901.0	70.6	6684.4	63.8	7197.4	66.2	6387.5	72.8	6292.6	68.3
TUFRunner™ '297'	5357.8	69.9	5903.7	62.5	6837.9	68.8	6114.6	70.7	6053.5	68.0
ASUS 51	4169.4	62.5	—	—	—	—	5494.1	69.2	4831.8	65.9
ASUS 50	3737.2	62.7	—	—	—	—	5333.1	68.7	4535.1	65.7
MRS 35	4105.0	68.0	—	—	—	—	5550.7	72.1	4827.9	70.0
Mean	4744.8		6439.7		6574.8		5669.8		5857.3	67.3
CV	12.5		11.9		9.8		6.4			
LSD (0.05)	1261.4		NS		927.4		517.6			
R^2	74.4		54.7		73.2		84.2			
Error DF	15		36		36		45			

Table 2. Two-year (2017 and 2018) yield summary of peanut variety trials in Mississippi.

Variety	Raymond	Stoneville	Overall average
	lb/A	*lb/A*	*lb/A*
Algrano 914	6497	6320	6409
Algrano QR14	6297	5781	6039
AU-NPL 17	6984	6332	6658
TUFRunner™ '297'	6907	6814	6860
FloRun™ '331'	7374	7111	7243
TUFRunner™ '511'	6925	6850	6887
Georgia-06G	6826	7128	6977
Georgia-09B	7322	6201	6762
Georgia-12Y	7075	6985	7030
Georgia-13M	6662	6841	6751
Georgia-14N	5984	5039	5511
Georgia-16HO	7215	7611	7413
TifNV-HI O/L	6748	5734	6241
Overall mean	6832	6519	6676

Table 3. Three-year (2016, 2017, and 2018) yield summary of peanut variety trials in Mississippi.

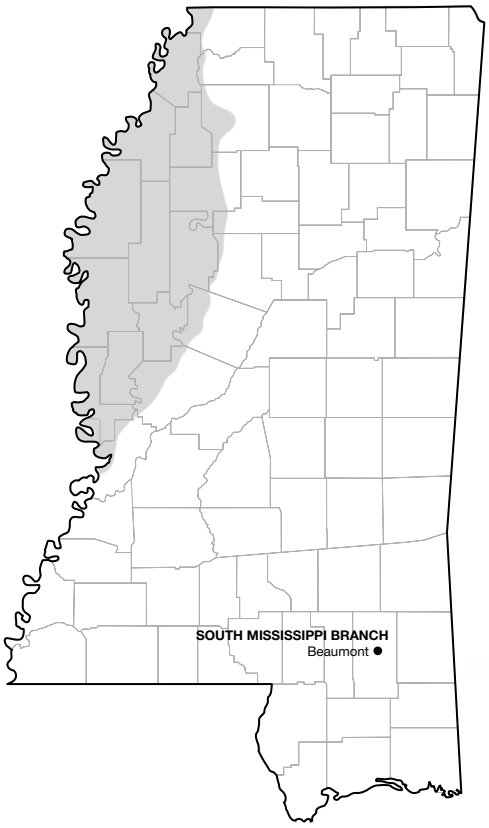
Variety	Raymond	Stoneville	Overall average
	lb/A	*lb/A*	*lb/A*
Algrano QR14	5757	5399	5578
TUFRunner™ '297'	6399	6213	6306
TUFRunner™ '511'	6340	6165	6252
Georgia-06G	6181	6471	6326
Georgia-09B	6489	5537	6013
Georgia-12Y	6400	6100	6250
Georgia-13M	5981	5954	5968
Georgia-14N	5484	4769	5127
Overall mean	6129	5826	5978

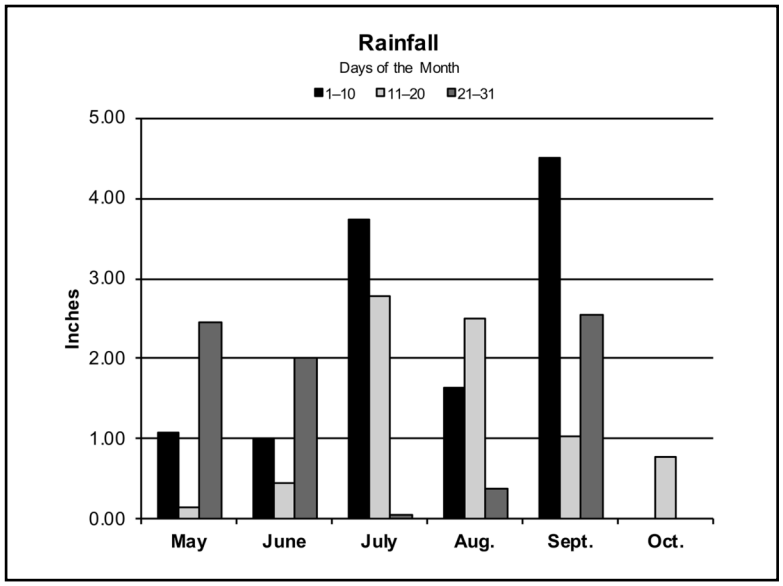
MAFES SOUTH MISSISSIPPI BRANCH, BEAUMONT

Crop Summary

Dry weather resulted in less-than-ideal conditions at planting. Soil moisture at planting was marginal for optimum germination and emergence. Rainfall in the days after planting allowed for the majority of plots to emerge to a stand. A supplemental nitrogen application was made due to a mechanical error that occurred in the liquid inoculant applicator during planting. Due to the issues with in-furrow inoculation and a reduced stand in certain plots, the best two replications were identified, and these two were the ones from which all yield and grade data were taken. Timely rainfall and a favorable growing season allowed for respectable yields, despite the difficulties experienced earlier in the season. The digging and harvest process was completed in a timely manner.

Soil type . . . . . .McLaurin fine sandy loam
Soil pH 6.0
Soil fertility . . . . . .P=M, K=M
Planting date . . . .May 14
Digging date . . . .October 11
Harvest date . . . .October 19
Herbicide . . . . . .Preemergence — Dual II Magnum @ 24 oz/A on May 14; Zidua @ 2 oz/A and Volunteer (clethodim) @ 16 oz/A on June 27
Postemergence — Pursuit @ 4 oz/A and Section (clethodim) @ 12 oz/A on July 6; Volunteer (clethodim) @ 12 oz/A on July 16; Volunteer (clethodim) @ 12 oz/A on August 8
Fungicide . . . . . .Bravo WeatherStik @ 16 oz/A and Headline @ 12 oz/A on July 16; Bravo WeatherStik @ 16 oz/A on August 8
Fertilizer . . . . . .Preplant — 13-13-13 @ 200 lb/A
Postemergence — Solubor @ 12 oz/A and N @ 30 lb/A (33-0-0) on July 16
Previous crop . . .Fallow





Rainfall Summary

	Inches
May	3.70
June	3.46
July	6.57
August	4.53
September	8.08
October	0.79
Total	27.13

Table 4. Yield, average seed size, and grade of peanut varieties at the MAFES South Mississippi Branch, Beaumont.

Variety	2018 yield	2-year[1] avg.	3-year[1] avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
Georgia-06G	5965	—	—	65.4	588
AU-NPL 17	5543	—	—	68.5	540
TUFRunner™ '297'	5358	—	—	69.9	548
FloRun™ '331'	5357	—	—	68.7	653
Georgia-16HO	5328	—	—	65.8	578
Algrano 914	5039	—	—	66.4	608
Georgia-12Y	5010	—	—	66.7	720
Georgia-13M	4938	—	—	66.5	772
TUFRunner™ '511'	4901	—	—	70.6	640
TifNV-HI O/L	4737	—	—	67.4	607
Georgia-09B	4179	—	—	68.5	603
ASUS 51	4169	—	—	62.5	694
Georgia-14N	4105	—	—	69.9	792
MRS 35	4105	—	—	68.0	667
ASUS 50	3737	—	—	62.7	664
Algrano QR14	3445	—	—	64.7	667
Mean	4745			67.0	646
CV	12.5				
LSD (0.05)	1261.4				
R^2	74.4				
Error DF	15				

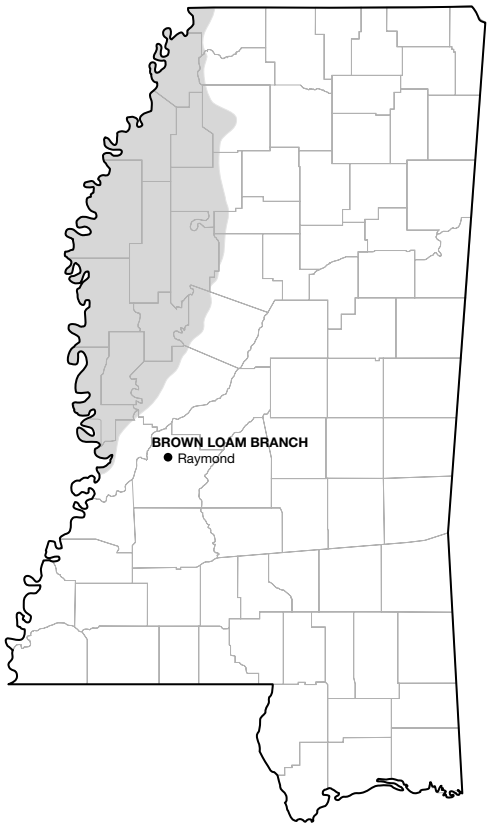
[1]No 2- or 3-year average.

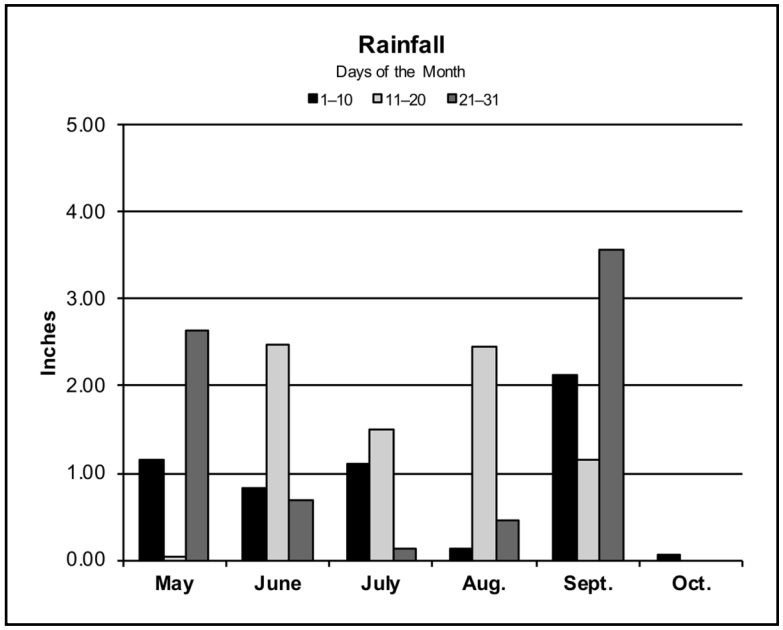
MAFES BROWN LOAM BRANCH, RAYMOND

Crop Summary

Plots at this location were planted into a stale seedbed that had been prepared the previous fall, after corn. Good soil moisture was present at the time of planting. All plots germinated quickly and emerged to a good stand. This location experienced a period of drought during the first half of summer, but timely rains for the remainder of the growing season allowed sufficient soil moisture for the plants to still have good yield potential. The plots were dug and harvested in a timely manner without any difficulties.

Soil type . . . . . .Loring silt loam
Soil pH 5.7
Soil fertility . . . . . .P=M, K=M
Planting date . . . .May 9
Digging date . . . .October 2
Harvest date . . . .October 11
Herbicide . . . . . .Preemergence — Dual II Magnum @ 24 oz/A; Valor @ 2 oz/A and Gramoxone @ 32 oz/A on May 9
Postemergence — Cadre @ 4 oz/A, Volunteer (clethodim) @ 12 oz/A, and Dual II Magnum @ 16 oz/A on June 15
Fungicide . . . . . .Bravo Weather Stik @ 16 oz/A on June 29; Bravo Weather Stik @ 16 oz/A and Headline @ 14 oz/A on July 23; Bravo Weather Stik @ 16 oz/A on August 14
Fertilizer . . . . . .Preplant — 0-20-20 @ 150 lb/A; Solubor @ 12 oz/A on June 29
Previous crop . . .Corn





Rainfall Summary

	Inches
May	3.81
June	4.00
July	2.73
August	3.03
September	6.82
October	0.05
Total	20.44

Table 5. Yield, average seed size, and grade of peanut varieties at the MAFES Brown Loam Branch, Raymond.

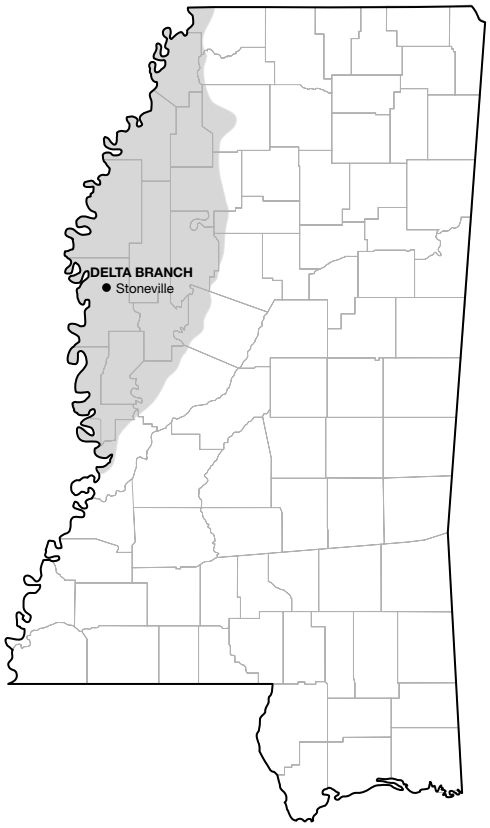
Variety	2018 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
Georgia-12Y	7101	7075	6400	66	724
FloRun™ '331'	7082	7374	—	62	692
Georgia-16HO	6755	7215	—	66	604
Georgia-09B	6751	7322	6489	66	696
AU-NPL 17	6706	6984	—	65	618
TUFRunner™ '511'	6684	6925	6340	64	548
Georgia-13M	6528	6662	5981	66	760
TifNV-HI O/L	6527	6748	—	62	548
Georgia-06G	6437	6826	6181	55	604
Algrano 914	6256	6497	—	63	688
TUFRunner™ '297'	5904	6907	6399	62	516
Georgia-14N	5813	5984	5484	67	744
Algrano QR14	5172	6297	5757	60	696
Mean	6440			63	649
CV	11.9				
LSD (0.05)	NS				
R^2	54.7				
Error DF	36				

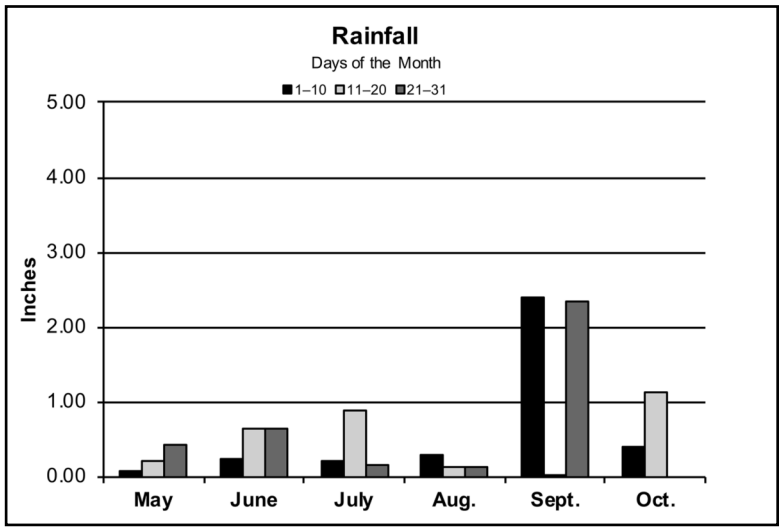
MAFES DELTA BRANCH, STONEVILLE

Crop Summary

Peanut plots were planted into a well-prepared seedbed that was do-alled just before planting. Soil moisture at planting was optimum for germination of seed. All plots emerged to a stand. Disease pressure was low during the season. Rainfall that occurred during September slightly delayed digging until early October. The plots were combined later that month due to rainfall that occurred in the weeks after peanuts were dug. No difficulties occurred during harvest and good yields were observed at this location.

Soil type . . . . . .Bosket and Beulah very fine sandy loam
Soil pH 6.8
Soil fertility . . . . .P=H, K=H
Planting date . . .May 9
Digging date . . . .October 2
Harvest date . . . .October 22
Previous crop . . .Grain Sorghum
Herbicide . . . . . .Preemergence — Dual II Magnum @ 24 oz/A and Valor @ 2 oz/A on May 9
Postemergence — Select MAX @ 16 oz/A + COC @ 32 oz/A on July 2 and July 30
Fungicide . . . . . .Abound @ 16 oz/A on June 26; Fontelis @ 24 oz/A on July 30





Rainfall Summary

	Inches
May	0.71
June	1.51
July	1.26
August	0.57
September	4.75
October	1.53
Total	10.33

Table 6. Yield, average seed size, and grade of peanut varieties at the MAFES Delta Branch, Stoneville.

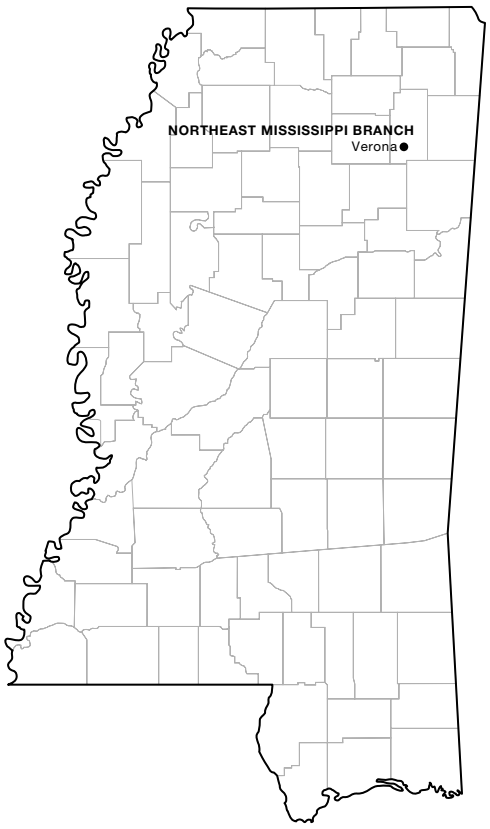
Variety	2018 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
Georgia-06G	7739	7128	6471	71	560
Georgia-16HO	7731	7611	—	65	568
Georgia-12Y	7338	6985	6100	66	696
TUFRunner™ '511'	7197	6850	6165	66	580
FloRun™ '331'	7150	7111	—	67	608
TUFRunner™ '297'	6838	6814	6213	69	500
Georgia-13M	6817	6841	5954	67	704
AU-NPL 17	6730	6332	—	65	600
Algrano 914	6392	6320	—	69	700
Georgia-09B	5712	6201	5537	68	576
TifNV-HI O/L	5495	5734	—	67	568
Georgia-14N	5323	5039	4769	71	688
Algrano QR14	5011	5781	5399	63	752
Mean	6575			67	623
CV	9.8				
LSD (0.05)	927.4				
R^2	73.2				
Error DF	36				

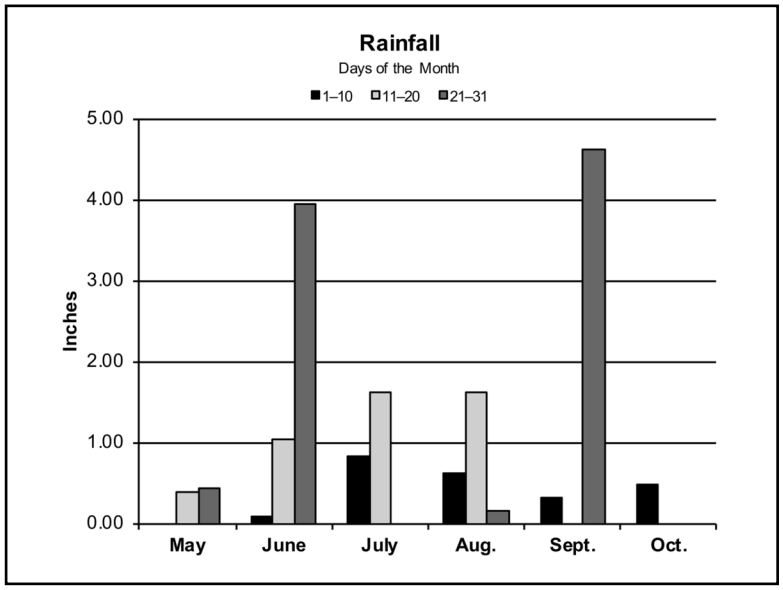
NORTHEAST MISSISSIPPI BRANCH, VERONA

Crop Summary

The peanut plots were planted into a well-prepared seedbed that had been hipped and rolled just before planting. Soil moisture at planting was ideal for germination. All plots emerged to a good stand. This location experienced a short dry spell during the month of May; however, timely rains fell throughout the remainder of the growing season. The digging and harvest process was conducted in a timely manner without difficulty and good yields were observed at this location.

Soil type . . . . . .Leaper fine sandy loam
Soil pH 6.3
Soil fertility . . . . . .P=H, K=H
Planting date . . . .May 11
Digging date . . . .October 3
Harvest date . . . .October 10
Herbicide . . . . . .Preemergence — Dual II Magnum @ 24 oz/A, Valor @ 2 oz/A, and Gramoxone @ 32 oz/A
Postemergence — Zidua @ 2 oz/A and Volunteer (clethodim) @ 12 oz/A on June 12; Volunteer (clethodim) @ 16 oz/A on July 23
Fungicide . . . . . .Bravo Weather Stik @ 16 oz/A on July 2; Bravo Weather Stik @ 16 oz/A and Headline @ 14 oz/A on July 23
Previous crop . . .Cotton
Fertilizer . . . . . .Solubor @ 12 oz/A on July 2





Rainfall Summary

	Inches
May	0.82
June	5.07
July	2.45
August	2.41
September	4.94
October	0.47
Total	16.16

Table 7. Yield, average seed size, and grade of peanut varieties at the MAFES Northeast Mississippi Branch, Verona.

Variety	2018 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
FloRun™ '331'	6560	—	—	71.9	656
TUFRunner™ '511'	6387	—	—	72.8	600
Georgia-06G	6300	—	—	68.8	616
Georgia-16HO	6298	—	—	71.0	608
TUFRunner™ '297'	6115	—	—	70.7	504
TifNV-HI O/L	6078	—	—	70.3	568
Georgia-09B	5742	—	—	71.3	660
Algrano 914	5702	—	—	69.6	644
AU-NPL 17	5635	—	—	71.2	572
Georgia-13M	5613	—	—	73.4	784
Georgia-12Y	5597	—	—	70.4	692
MRS 35	5551	—	—	72.1	616
ASUS 51	5494	—	—	69.2	648
ASUS 50	5333	—	—	68.7	628
Georgia-14N	4162	—	—	74.1	703
Algrano QR14	4149	—	—	66.9	672
Mean	5670			70.8	636
CV	6.4				
LSD (0.05)	517.6				
R^2	84.2				
Error DF	45				

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The mission of the Mississippi Agricultural and Forestry Experiment Station and the College of Agriculture and Life Sciences is to advance agriculture and natural resources through teaching and learning, research and discovery, service and engagement which will enhance economic prosperity and environmental stewardship, to build stronger communities and improve the health and well-being of families, and to serve people of the state, the region and the world.

George M. Hopper, Director **www.mafes.msstate.edu**